

The Effect of Social Media on Anxiety In Young Adults

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Statement and declaration

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Abstract

Introduction: Social media acts as a fundamental tool that young people deeply need but it brings both positive connections and learning opportunities alongside anxiety and fear of missing out (FoMO) and fear of negative evaluation (FNE). This study explores the relationship between social media use and anxiety with attention on the mediating roles of FoMO and FNE.

Method: A review of peer-reviewed literature in PubMed, ScienceDirect, and Google Scholar was performed. Variables such as duration of use, engagement patterns and symptoms of FoMO/FNE were analyzed in the study, using thematic analysis to identify recurrent patterns.

Findings: Long-term social media usage is powerfully associated with increased levels of anxiety, resulting from passive consumption, upward social comparisons, and compulsive behaviors. FoMO and FNE increase these effects further and a vicious cycle is created between anxiety and greater platform engagement. The research improves digital well-being investigations through process discovery of social media mental health mechanisms and the development of practical intervention methods.

Conclusion: This research provides a new synthesis of psychological and behavioral perspectives on the way multi-platform social media use strengthens anxiety. It reveals neglected effects at the platform level and introduces a novel framework that relates digital behavioral cycles with mental health outcomes.

Keywords: Fear of missing out; Fear of negative evaluation, Anxiety; social media.

1. Introduction

Today, social networking has grown, and it has become the platform for the modern-day communication practices for the digital revolution in the twenty first century to the young adults. Over 4.5 billion users worldwide maintain daily routines that integrate with platforms which include Instagram, TikTok, Facebook and Twitter (Shabir et al., 2015, Sabla and Gour, 2023). Studies demonstrate that the positive aspects social media offers to users do not correspond with improved mental well-being. Research evidence links heavy social media usage to an increase in anxiety symptoms plus depression and there is an association with maladaptive behaviors including fear of missing out (FoMO) and fear of negative evaluation (FNE) (Oberst et al., 2017, Fioravanti et al., 2021). The findings from recent studies demonstrate that social media usage is longer than three hours per day results in anxiety symptoms affecting 38 to 42 percent of young adults thus making this issue a crucial public health concern (Lin et al., 2016, Dobbs, 2022).

Negative effects of social media usage are numerous for psychological health. Passive content consumption that involves purposeless scrolling through carefully selected perfect content leads users to make upward social comparisons which create a sense of inferiority compared to others' highlighted lives (Ceder-Thorin, 2024). The practice of social media content consumption leads to reduced self-worth and increased nervousness mainly among teenagers and young adults (Sabik et al., 2020). The platform activates addictive neural pathways through dopamine-based mechanics which combine endless streams and push alerts (Park and Kim, 2022). Sleep disruption occurs because of these mechanisms according to Rosen et al. (2016) while the compulsive checking behavior leads to stress escalation and emotional problems (Calancie et al., 2017).

The existing knowledge base contains several unaddressed areas in research. Analyzing individual platforms fails to identify how people connect between multiple platforms while using them at the same time. Users who interact with Instagram photographs can develop body image issues while experiencing Twitter-based political anxiety and time manipulation through TikTok algorithms which collectively intensify their mental strain (Zhao, 2024). Research has not studied how social media interactions between various platforms create increased anxiety levels throughout the network. Research data regarding the effects of screen time reduction on different population groups lacks extensive evidence base due to insufficient long-term studies. Does cutting usage by 30% result in parallel reductions of anxiety for two different age groups including students who are 19 and professionals who are 27? This research lacks thorough investigation into how distinct platform features across Instagram, TikTok and Snapchat contribute to the growth of FoMO and FNE. Research has failed to accurately assess how the features designed to enhance user connection influence human psychology. Studies on social media neglect population differences in age, gender along with economic or cultural background of users because these elements lead to increased mental strain among women and socially marginalized groups (Charmaraman et al., 2022, Jarman et al., 2024).

The psychological measures of social media effects have become harder to determine because of AI-manipulated content and advancements in virtual reality social media development. The research evaluates anxiety-based responses across different population groups that use multiple social media accounts while testing actual usage reduction interventions. The research project will establish proven guidelines for digital practice behaviors and platform design ethics that both present vital mental health protection in current digital connection environments.

The research investigates the intricate social media-usage patterns of young adults through their anxiety symptoms with additional focus on fear of missing out (FoMO) and fear of negative evaluation (FNE). The study sets three essential research objectives to discover essential variables such as the amount of time users spend on their platforms and their platform preferences and interaction patterns which regulate how social media consumption affects anxiety symptoms. This research will measure the connection between targeted social media reduction during four weeks to anxiety reductions using quantitative metrics for developing behavioral interventions. The study assesses age-based and sex-based susceptibilities to social media exposure from the perspective of population factors that affect anxiety reactions. A blended set of research objectives leads to a detailed exploration of digital impact on adolescent mental health, which makes it possible to design specific protection measures against digital harm.

1.1. Hypothesis of the study

- *H1*: "Increased social media use correlates with higher anxiety levels."
- *H2*: "Reduced social media use mitigates anxiety symptoms."

2. Method:

The research made a thorough review of peer-reviewed articles from PubMed, ScienceDirect, and Google Scholar databases. The research studied social media usage patterns related to the anxiety symptoms experienced among young adults. The research examined three variables that were critical in the study which included platform duration, engagement patterns and FoMO/FNE symptoms. The applied method of thematic analysis helped researchers to analyze synthesized data in order to identify recurring patterns, which led to factual conclusion.

3. Association Between Social Media Use and Anxiety

There is a diversity of the ways in which measurement of anxiety is conducted in a research situation, which demonstrates the complexity of this psychological concept. Tablet forms of common measures (Hamilton Anxiety Rating Scale (HAM-A), Depression Anxiety Stress Scales (DASS)) are evidence based clinical measures, while tablets of specific anxiety manifestations in social context (Fear of Missing Out Scale (Haghani et al., 2024) and Fear of Negative Evaluation scales can be described (Wolniewicz et al., 2018). The measurement methods are very different from one study to another, and different response scales are used (for example, 5-point vs. 6-point Likert scales), and different methods of assessment are used from direct reporting of symptoms to indirect measures of psychological distress (Umucu et al., 2022).

This fundamental piece of wisdom about nature and the measurement of anxiety will lead into our study of such associations between anxiety and social media use in young adults. Below is a cross-sectional analysis to examine the relationship between various patterns of social media engagement to the generations of anxiety symptomatology using these established measurement tools in a rigorous measurement of this increasing concern of mental health in a digital setting.

3.1. Increased social media use correlates with higher anxiety levels (*H1*)

The diverse cross-sectional studies have been found to be consistent in proving a strong positive correlation between increased social media activity and in increased anxiety symptoms in young adult population. This relation has been explored from various dimensions of social media use such as duration of use, frequency of engagement and trend of interaction between users across platforms. The percentage of people using two or more social media platforms increased from 2013 to 2014 by 10% (Shannon

Greenwood, 2016). Young people used Facebook 88%, Instagram 59%, Snapchat 56%, and Twitter 26% in 2016 (Kross et al., 2013). The evidence indicates that the associated is not merely correlational and represents the complex psychological processes that are triggered by digital social interactions.

Perhaps the most comprehensive of such analyses was performed by Vannucci et al. (2017) who studied demographically representative data on 563 young American adults aged 18-30. The results showed that the participants used 6.63 hours (SD = 6.44) daily on different social media platforms, with statistically significant positive correlation ($p < 0.001$) between the time spent on social media and anxiety severity level as measured by the validated Overall Anxiety Severity and Impairment Scale (OASIS). The study proceeded to differentiate general social media use from particular platform behaviors, with some activities, including passive content consumption being especially highly correlated with anxiety outcomes (Vannucci et al., 2017). Another important matter that has emerged is also the diversity of platforms used in this regard. Primack et al. (2017) conducted a nationally representative survey of 1,787 young adults and observed strong dose-response relationship between number of platforms used and anxiety symptoms. Their data demonstrated that people who reported using between 7-11 different social media platforms had three times the likelihood of having clinically significant anxiety symptoms as people who used only 0-2 platforms. Even after adjusting for pertinent demographic variables, this conjunction was still meaningful, indicating that the cognitive and emotional load of having multiple digital identities on different platforms probably plays a great role in psychological stress (Primack et al., 2017).

There are several well documented psychological and physiological pathways through which the relationship between social media use and anxiety is mediated. Passive consumption trends including the phenomenon of “lurking” (Osatuyi, 2015) constitute one of the major avenues of the development of anxiety (Osatuyi, 2015). This passive involvement, with the observer watching others’ content, but not doing anything, sets up opportunities for upward social comparisons. Repeated exposure to highly curated, idealized peer representations of lives (Ceder-Thorin, 2024) makes users compare themselves with peers in unfavorable ways that debase self-esteem and induce anxiety. Another important mediator is the Fear of Missing Out (FoMO), and the scale development of Przybylski et al. allows for the exact measurement of this phenomenon (Przybylski et al., 2013). Studies show that FoMO metrics-high scorers have more compulsive usage patterns and longer use of social media platforms, which then predict increased anxiety symptoms. This increases a self-perpetuating cycle in which anxiety leads to more use of the platform, which in turn makes the anxiety symptoms worse. Incipient neurocognitive research indicates other biological mechanisms, which imply that the intermittent reinforcement schedules that have been built into social media platforms can stimulate neural reward pathways comparable to those underlying addictive behaviors (Park and Kim, 2022). The perpetual waiting for social confirmation (through notifications, likes and comments) creates a chronic level of low-level physiological arousal which may set the stage for anxiety disorders in users. In addition, the effect of social media on sleep patterns is a well-known physiological mediator. Several research have reported on the way that late-night social media use interferes with both the quality of sleep and the circadian rhythm through a two-pronged process, the blue light emission from digital devices suppresses the production of melatonin while the emotionally activating content provokes cognitive arousal (Rosen, 2021, Haghani et al., 2024). With the well documented relationship between sleep disturbances and anxiety disorders, this pathway may account for a large proportion of the link between social media use and symptoms of anxiety. Combined, these mechanisms passive consumption, social comparison, FoMO-fueled compulsive use, neurocognitive

reinforcement patterns, and sleep disruption form an integrated model of the ways in which social media use converts to observable anxiety outcomes.

3.2. Reduced social media use mitigates anxiety symptoms (H2)

The opposite hypothesis - that purposeful decrease and manipulation of social media engagement can result in demonstrable reductions in anxiety symptoms – has also been vindicated by empirical work, although the evidence base is a little sparser because the research in this area is dominated by correlational designs.

Bettmann et al. performed a careful review of how deliberate modifications of the social media behavior patterns influenced mental health outcomes. Their study of 274 young adults showed that those participants who were able to decrease their passive consumption behaviors (for example, mindlessly scrolling through newsfeeds) while maintaining or increasing active, purposeful engagement (for example, direct messaging with close friends) exhibited clinically significant reductions in the anxiety scores that were analyzed with the Depression Anxiety Stress Scale (DASS-21). This result indicates that the qualitative nature of social media engagement may as well be of great importance in influencing mental health outcomes as its quantitative ones (Bettmann et al., 2021).

The most convincing experimental evidence for this hypothesis is provided by Tromholt's (2016) novel experimental design in which 1,095 Danish participants were randomly divided into two groups: those who carried on their regular Facebook usage and those who abstained from the site for a week. The abstinence group demonstrated statistically significant improvements in scores of life satisfaction and reductions in self-reported anxiety symptoms of small-to-medium effect sizes. Although the use of self-reported compliance as a basis for the study is a methodological weakness, it nonetheless gives important preliminary evidence for a causal relationship between social media reduction and better psychological well-being (Tromholt, 2016).

New studies have started to shed light on different routes of social media engagement reduction leading to anxiety symptoms relief. One noteworthy approach is that of a weakening of the social comparison processes, that is, a reduced exposure to well-curated representations of other people's lives, which results in fewer negative comparisons to self, leading to better self-evaluation (Sabik et al., 2020). This effect shows itself especially strong for image-based platforms that focus on physical appearance and lifestyle portrayals where the decrease in exposure to idealized material seems to directly decrease self-critical thoughts and social anxiety. Another important pathway is the restoration of attentional capacities, because the constant switching of tasks and fragmented attention that social media use plays a great part in cognitive overload (Chen and Lee, 2013). When people limit their consumption of social media, they tend to get better ability to maintain focused attention, which correlates very much to low stress levels and better ability to regulate emotions.

At a neurobiological level, the intermittent reinforcement schedules integrated into social media may gradually dysregulate dopamine responses, yet periods of decreased use seem to help restore more normal neural reward processing patterns (Park and Kim, 2022). Perhaps most significantly, reduced digital communication often results in more real interaction (Kross et al., 2013), which is usually more meaningful emotionally, and closer socially, to people than are their digital equivalents. These interactions in person, additionally, lead to greater relational satisfaction, and contribute to the re-growth of social skills and confidence that can have atrophied during periods of intense social media use. Combined, these mechanisms help to understand what moderated social media uses a way out of anxiety cycle through

decreasing social comparisons, helping to restore cognitive functioning, balancing neurochemical responses, and establishing more genuine relationships.

The current body of cross-sectional evidence provides strong support for both hypotheses, demonstrating not only that excessive social media use correlates with higher anxiety levels through multiple psychological pathways, but also that intentional modification of digital behaviors may serve as an effective strategy for anxiety mitigation. However, the field would benefit from additional research employing more rigorous methodological approaches to further clarify these relationships and their underlying mechanisms.

4. Longitudinal Studies on Social Media Use and Anxiety in Young Adults

The longitudinal findings of the impact of social media on anxiety offer important insights to our two key hypotheses regarding temporal relationships. Kross et al. (2013) conducted a pioneering experience-sampling study to sample a significant gap in the literature by using a three-phase longitudinal design on 82 young adults. Their methodology showed several findings about *H1* (“Increased social media use correlates with higher anxiety levels”). Participants that reported heavier Facebook use during the two-week monitoring period reported life satisfaction scores that declined, evidence of a cumulative negative effect of extended engagement. Remarkably, the study also picked up real-time patterns in which those who are already feeling uneasy tend to ramp up their Facebook usage, which then inflames their anxious states, a result which fits the proposed bidirectional relationship in *H1* where anxiety both causes and is caused by the excessive use of social media. Although the anxiety measures themselves did not achieve statistical significance, the overall trend does support the hypothesis that the heavier, longer-term use, the worse the emotional state.

The evidence presented by Tromholt’s (2016) experimental work is a strong proof of *H2* (“Reduced social media use mitigates anxiety symptoms”). In this large sample study (N=1,095), the one-week Facebook abstinence group reported significantly better wellbeing than controls, and effect sizes indicated clinically meaningful reductions in anxiety related symptoms. This manipulation of the experimental manipulation directly tests our second hypothesis that even a brief reduction in social media involvement can lead to measurable improvements in mental health. The fact that it was recruited through Facebook itself increases the ecological validity of the study, although the fact that compliance had to be self-reported is also a limitation. Crucially, Tromholt’s results complement the observations of Kross et al., with the two thus indicating that, while increased use of social media can slowly raise anxiety (*H1*), a conscious decrease can quickly reduce symptoms (*H2*).

A few important takeaways are gained from these longitudinal studies: First, the research of Kross et al. shows that effects of social media pile up over time, with heavier users suffering progressive deteriorations of wellbeing. Second, Tromholt’s experiment shows what the potential reversibility of these effects may be through moderated use. Third, both studies underline the importance of usage patterns – Kross et al.’s discovery that anxious people use social media more often points to a self-perpetuating cycle that fits the neurocognitive mechanisms discussed above. The one-week period in Tromholt’s study is significantly short but remarkably reveals how rapidly some of the benefits of reduced engagement might occur, perhaps via attenuated social comparison and restored attentional capacity.

These longitudinal designs address critical shortcomings of cross-sectional studies by providing temporal sequences, but gaps exist. The sole concentration on Facebook in the two studies opens the question of the platform-specific effects, and the brief duration of Tromholt’s intervention does not show whether the

benefits would last or increase with longer abstinence. However, in combination these studies offer strong support for both hypotheses to show that both gradual escalations from prolonged social media usage (*H1*) and relatively rapid improvements from conscious reduction (*H2*) are involved in the relationship with anxiety. The findings highlight the importance of longitudinal approaches to investigation of the dynamic, reciprocal relationships between digital behaviors and mental health outcomes. Future research that extends these designs into multiple platforms over longer timeframes would further solidify our understanding of these critical relationships in the digital age.

5. Theoretical Frameworks Explaining Social Media-Anxiety Relationships

The existing relationships between social media use and anxiety (*H1* and *H2*) can be expanded with the help of several theoretical frameworks, which consider individual differences and cognitive mechanisms.

5.1. Personality and Usage Motives

Wilson et al application of the Five-Factor Model shows us how personality traits shape the social media engagement pattern that is important to the development of anxiety (Wilson et al., 2010). In their research of 201 young adults, they discovered that people who were highly extroverted but very low in conscientiousness demonstrated the greatest tendencies toward excessive social media use (consistent with the proposition of *H1* about the correlation between increased use and anxiety). This supports the idea that personality might mediate the social media-anxiety interplay with some trait combinations increasing the propensity to compulsive patterns of engagement. Surprisingly, the result that extroverts (not introverts) displayed heavier usage contradicts previous assumptions, possibly suggesting that very social people carry social interactions into the digital world, which could paradoxically increase anxiety through overstimulation (Tromholt, 2016). These differences based on personality bring to the fore the need to take account of individual variability when analyzing *H1*'s generalized assertion of usage-anxiety correlations.

5.2. The Communication Overload Model

Chen and Lee's overload model provides a cognitive framework for understanding how social media engagement translates into psychological distress (*H1*). Their structural equation modeling demonstrated that frequent Facebook interactions (liking, commenting, sharing) directly predicted psychological distress, supporting *H1*'s core premise (Chen and Lee, 2013). While the hypothesized mediating roles of communication overload and self-esteem weren't statistically significant, the model overall suggests that anxiety emerges from the cumulative burden of managing multiple digital interactions - a mechanism that would be alleviated through reduced use (*H2*). The model's emphasis on communication overload particularly explains why multi-platform use (as found by (Primack et al., 2017)) shows such strong associations with anxiety. This theoretical perspective complements the neurocognitive mechanisms discussed earlier, together providing a more comprehensive explanation for both hypotheses.

6. Conclusions

A detailed literature analysis demonstrates social media activities directly cause elevated mental anxieties in young adults. Research shows that lengthy social media exposure combined with platform switching creates more anxiety as well as FOMO and FNE symptoms in users. The psychological stress increases as people observe curated content passively because these selected pictures promote social comparison thus lowering their personal value. The research demonstrates that social media anxiety exists in a repetitive pattern because continuous platform use simultaneously fuels and results from increased emotional

suffering. Studies show that purposeful management of social media usage produces positive mental health results which confirm reduced use as an element for better well-being. Research still needs to investigate the individual platform effects on users together with the total mental health implications of decreased usage periods while studying how demographics affect behaviors on social media platforms. Future studies need to conduct longitudinal research and experimental testing to create causational connections and implement specific intervention methods. The benefits of social media for maintaining connections and information exchange have serious negative effects on mental health that arise when users misuse these platforms. Youth psychological safety depends on receiving digital literacy education while companies should design responsible platforms alongside adopting educational strategies for digital use in the online world.

7. Study limitations

A few limitations are associated with this study, including the use of cross-sectional data, which does not allow for causal inferences, possible biases arising from the use of self-reported measures, and absence of platform specific analysis which considers social media as one homogenous entity. The focus on western young adults reduces generalizability, while short term intervention studies do not provide much information on long term effects of decreased use. Also, the fast-changing digital landscape may make some results irrelevant, and the analysis focuses on negative results without addressing possible positive effects of social media use which could attenuate anxiety. Such constraints point to the necessity of longitudinal, experimental and varied research to understand better this convoluted relationship.

Statement and declaration

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Data Availability statement

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